RAX™ 8 Bay-XJ User Manual

RAX841-XJ

Models Covered:
RAX840-XJ, RAX841-XJ, and RAX845-XJ

- Two LEDs per bay for power and access.

- Fast multi-lane SAS/SATA host connection.

- Each SATA hard drive has its own data channel for maximum speed.

- Sturdy aluminum case provides excellent heat dissipation and rugged durability.
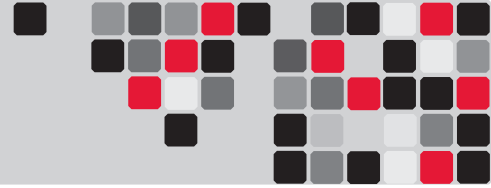
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1.1 RAX-XJ Accessories
Check the accessories with RAX-XJ. Contact CRU if any parts are missing or damaged.
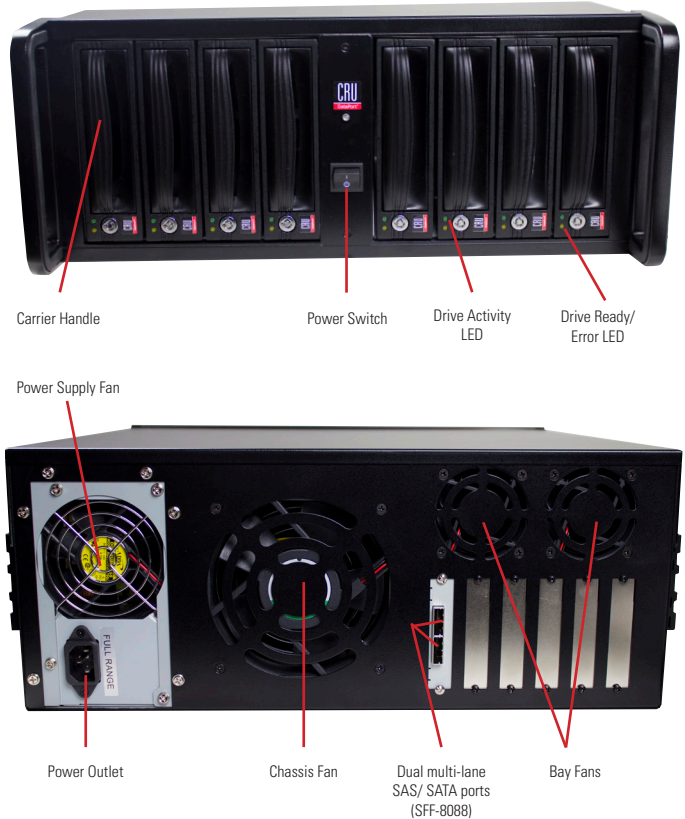
Accessories Included with RAX 8-Bay-XJ:

Accessories	Quantity
RAX-XJ unit	1
Power cords (RAX 840 and RAX841 are available with single or dual power supplies)	1 or 2
Quick Start Guide and warranty information	1

RAX 8-Bay -XJ Bundle also includes the following:

Accessories	Quantity
Compatible host card	1
Multi-lane SAS/SATA cables	2

1.2 Identifying Parts
Take a moment to familiarize yourself with the parts of RAX-XJ. This will help you to better understand the remaining instructions.

Carrier Handle   Power Switch   Drive Activity LED   Drive Ready/ Error LED

Power Supply Fan

Power Outlet   Chassis Fan   Dual multi-lane SAS/ SATA ports (SFF-8088)   Bay Fans
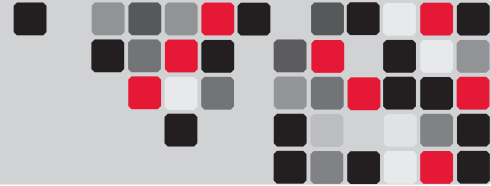
2. Installation Steps

2.1 Installing a Host Bus Adapter (HBA)

(Optional) Install a host bus adapter (HBA) with multi-lane SAS/SATA ports into an empty expansion slot inside your computer. The following general steps will work for most cards. Instructions for individual cards may vary, so consult your card's user manual.
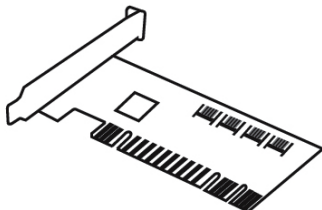
a. Power down the computer system.

b. Insert the PCI card into an available PCI slot. Do not force it, but it will take firm pressure to fully seat the interface. It may help to gently rock the card back and forth as you apply pressure.

c. Once the card is fully seated in the slot, secure it in place with a screw.

d. Turn the computer back on.

2.2 Installing Hard Drives

2.2.1 HDD Installation for RAX840-XJ

a. Pull on the ejection handle and open the door.

b. Slide in your SATA hard drive, connector-end first.

NOTE: The drive's label should be facing up.

c. Shut the door.

2.2.2 HDD Installation for RAX841-XJ

a. Slide the drive carrier out of the RAX.

b. The carrier's cover is held in place by a screw on the rear of the carrier. Remove the screw, then remove the cover.

c. Slide the drive in from the front of the carrier.

d. Mate the connection on the drive with the connection on the drive carrier circuit board.

e. Flip the drive/carrier assembly over, and secure the drive in place with the provided screws.

f. Attach the Temperature Control Cooling Sensor to the top of the drive with an adhesive strip.

g. Replace the carrier cover and secure the screw on the rear of the carrier.

h. Slide the carrier into the RAX.

NOTE: A flashing **green** LED on the bay indicates bay fan failure. Call CRU technical support for assistance.

2.2.3 HDD Installation for RAX845-XJ

a. Slide the drive carrier out of the frame.

b. The carrier's cover is held in place by two screws—one on either side of the carrier. Remove these screws, then remove the cover.

c. Insert the drive into the carrier.

d. Mate the connection on the drive with the connection on the drive carrier circuit board.

e. Flip the drive/carrier assembly over, and secure the drive in place with the provided screws.

f. Replace the drive cover and secure the screw on the rear of the carrier.

g. Slide the carrier into the frame assembly.

NOTE: A flashing **red** LED on the bay indicates bay fan failure. Call CRU technical support for assistance.

2.3 Connecting and Powering RAX 8-Bay-XJ

Connect the SFF-8088 data cable to the RAX and your host computer. Plug in the power cord(s) to the unit and into a grounded electrical outlet. With hard drives in the unit, turn on the power.

- For the RAX840-XJ the drives will begin to spin up automatically.
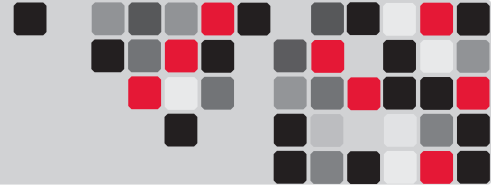
- For the RAX841-XJ, use the included set of keys to turn the key lock 90 degrees clockwise to power on each hard drive.

- For the RAX845-XJ, push in the power buttons on each frame until the LED lights up to power on each hard drive.

Your RAX is now ready to use! If the hard drives are already formatted, the RAX can be used right away. If the hard drives are brand new, or the formats are not compatible with your computer, the drives will need to be formatted before being used. See section 3, "Usage with Mac and Windows Operating Systems" for information on formatting.

2.4 Tips for Rack Mounting RAX 8-Bay-XJ

Elevated Operating Ambient Temperature: Install the equipment in an environment compatible with the maximum ambient temperature of 40° C

Ventilation: Do not block or inhibit the air flow to the unit.

Mechanical Loading: Use care to ensure the RAX is mounted in a level position to prevent damage.

Circuit Overloading: Do not overload the circuits. Refer to the name plate ratings on the equipment.

Reliable Grounding: Maintain grounding of rack-mounted equipment by using indirect connections to the branch circuit (i.e. UPS battery backups, power strips).

3. Usage with Mac and Windows Operating Systems

3.1 Usage with Mac OS X

3.1.1 Compatibility

RAX uses 3.5-inch SATA (Serial-ATA) hard drives only. RAX does not require drivers for operation under Mac OS X. However, if you install a host card specifically to work with this product, that card may require drivers. See your card's User Manual for drivers and instructions.

3.1.2 Formatting a Drive

If you purchased your RAX pre-populated with hard drives, this step should not be necessary unless you wish to change the format or erase the drive. To format, use Mac OS X's Disk Utility (found in the applications folder).

a. Click on the drive in the window to the left (see following image).

b. Click the Erase tab in the window to the right (see following image).

c. Select the format type. Most users prefer Mac OS Extended with Journaling (HFS+), which is required for compatibility with Time Machine (OS 10.5 or newer). If you need to use your RAX with both Mac and Windows computers, select MS-DOS File System instead.

d. Enter a name for the new volume and then click "Erase" to start the process.

3.1.3 Mounting and Unmounting Volumes

If the hard drives installed in RAX are already formatted, an icon representing the drive's volume will appear (mount) on the desktop. You can begin using the volume right away. If the drive is unformatted, a message will appear on the desktop saying that the disk is unreadable. You can use OS X's Disk Utility to easily format the drive (see section above).

Unmount the volume before powering down the unit by dragging the volume's icon to the trash bin, or by selecting the volume then pressing Command-E. Disconnecting the unit without first unmounting the volume can result in data loss.

#### 3.1.4 Creating a Boot Drive

To activate this feature, you must first install OS X on the hard drive in your carrier. The easiest way to do this is to clone an existing system drive using a utility such as Carbon Copy Cloner or Super Duper. Next, go to System Preferences --> Startup Disk. A window will list the available bootable volumes. Select the volume from which you wish to boot. Another method is to hold down the Option key during boot up. A screen should appear that allows you to select the volume you wish to use. This is useful if you wish to boot from your RAX hard drive only some of the time.

### 3.2 Usage with Windows Operating Systems

3.2.1 Compatibility

RAX-XJ uses 3.5-inch SATA (Serial-ATA) hard drives only. RAX does not require drivers for operation under Windows XP, Vista, or 7. However, if you install a host card specifically to work with this product, that card may require drivers. See your card's User Manual for drivers and instructions.
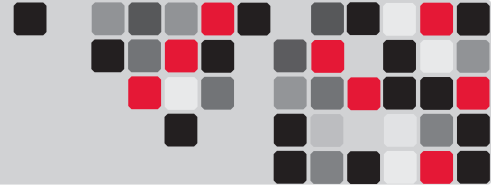
4.2.2 Formatting a Drive

If you purchased your RAX pre-populated with a hard drive, this step should not be necessary unless you wish to change the format or erase the drive. To format, use the Disk Management utility.

a. Right-click on My Computer, then select Manage. The Computer Management window will open.

b. In the left pane of this window, left-click on Disk Management.

c. The drive should appear in the list of Disks in the lower middle/right pane (see picture below). You may need to scroll down to see it. If the drive is already formatted, you can identify it easily by its volume name. If it's unformatted, the Drive Properties Box will say "Unallocated" and you'll need to initialize the disk before formatting it. Initialize the disk by right-clicking the Device Properties Box and selecting Initialize Disk.
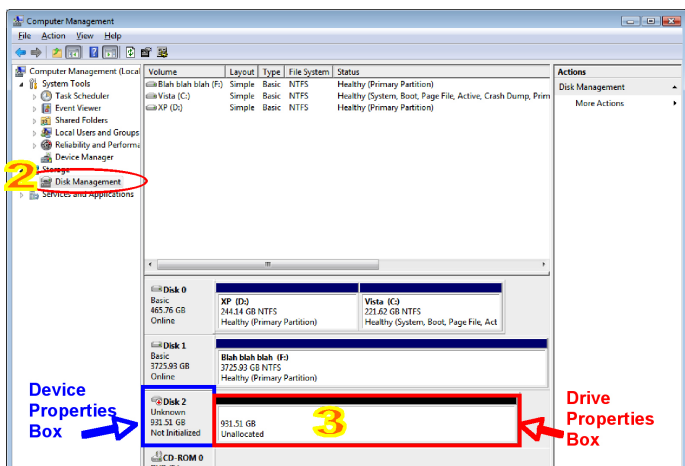
d. To format the drive, right-click the Drive Properties Box and select Format.

e. If you are prompted to select a partition type, select MBR for volumes 2TB or smaller, or GPT for volumes larger than 2TB.

NOTE: Windows XP does not support GPT or volumes larger than 2TB.

f. Click through several more windows, leaving the default settings, until you see a window that allows selection of a file system. Choose NTFS and enter a name for the new volume. Be sure to check the box labeled "Perform a quick format" unless you want to completely erase any data on the drive and have time to wait. A quick format should take less than a minute, while standard formatting may take several hours.

g. Click "Next" and then "Finish" to start the format process. When the format is complete, the Drive Properties Box will update to show the new volume name. The new volume can now be found in My Computer.

3.2.3 Mounting and Ejecting Volumes

If the hard drives attached to RAX are already formatted, you can begin using the volume right away. When the unit is properly connected and turned on, a window may open to allow you access to the volume. If no window appears, you can find the volume by double-clicking "My Computer."

Eject the RAX before powering it down by single-clicking the green arrow icon on the task bar, then selecting "Safely remove…." Windows will indicate when it is safe to disconnect RAX. Disconnecting the unit without first ejecting it can result in data loss.

3.2.4 Creating a Boot Drive

Some PC motherboards support booting from an external device. To activate this feature, you will need to adjust the motherboard's BIOS settings. Check with your motherboard's manufacturer or owner's manual for details.

4. Frequently Asked Questions (FAQ)

Q: Why won't the computer let me eject or unmount my drive?

A: There may be a software application running in the background with an active link to the drive. Sometimes, you may see a message such as "The disk is in use and could not be ejected. Try quitting applications and try again."

It could be a background application like Sherlock or the Finder. This is not a defect or issue caused by your RAX unit. Try invoking the Force Quit feature in OS X to see what software may be running. For Windows, the equivalent command is CTRL-ALT-DEL.

Q: How do I set up the RAID on my product?

A: RAX-XJ by itself does not have RAID capability. However, coupled with a host card such as TeraCard PCIE-2XR it is capable of creating RAIDs 0, 1, 4, 5, 10, JBOD and DVRAID support. Please see the User Manual for your specific card for instructions on setting up such RAIDs.
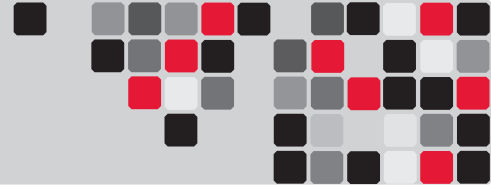
Q: What brands/models of drives work best with RAID host cards?

A: The manufacturers of RAID host cards, recommend using enterprise class SATA or SAS drives with this card. Such drives generally have higher tolerance for command timeouts and retries, which improves RAID performance and compatibility.

Q: Why is my hard drive experiencing data corruption?

A: Many things can cause data corruption on hard drives, whether they are inside your computer or inside an external storage product. Malicious software, OS bugs, failure to properly disconnect external devices, or no reason at all. Data corruption or loss is therefore not covered by warranty (this is the case with all rational companies in the storage industry).

The first thing to try is restarting both the computer and the external device. If the data is still corrupted, try running built-in OS utilities (such as Mac OS X's Disk Utility First Aid) on the hard drive. For best results, boot your computer with a Mac OS X Installation CD, and launch Disk Utility from the CD. When you reach the Mac OS Installation program, you can run Disk Utility from one of the menus at the top of the screen. From Disk Utility, you can run "Verify Disk" and "Repair Disk" to find and fix any errors that may be present in your Mac OS installation.

If the OS utility doesn't help, you may need Data Rescue. This is a great solution for recovering lost data from a hard drive which has suffered data loss or corruption. If there is a true hardware failure of your hard drive that prevents it from communicating with your computer, there is no software solution in existence that can fix this problem. However, since we cannot tell you with any certainty whether or not you are experiencing hardware failure in your particular hard drive, we would encourage you to download a free demo version of ProSoft's Data Rescue from www.prosofteng.com. It is limited, in that it only allows you to recover one file per session, but it will tell you if it even sees any files.

Q: Will this product work with hard drives larger than 2.2TB

A: Yes, assuming the rest of your configuration (e.g. OS, BIOS, host drivers) supports large volumes, this product is compatible with drives larger than 2.2TB.

6. Technical Specifications

Product Name/Code	RAX840-XJ /RAX841-XJ/RAX845-XJ
Host Interface	Multi-lane SAS/SATA 6Gb/s (SFF-8088)
Drive Types Supported	3.5-inch SATA 1 or SATA 2 hard drives
Power LED	Yes
Access LED	Yes
Operating System Requirements	Windows XP, Vista, Windows 7 Mac OS X, Linux distributions that support the connection type
Power Switch	2 position: On / Off
Power Supply	Input: 100-240VAC Output: 350 Watts
Cooling Fan	1 Chassis fan 2 Bay fans 2 Power supply fans
Compliance	EMI Standard: FCC Part 15 Class A, CE EMC Standard: EN55022, EN55024
Unit Weight	52.6 lbs with drives, 41.4lbs without drives
Dimensions	426mm W x 449.7mm D x 177mm H
Support	We don't want anything to go wrong with your CRU-DataPort product. But if it does, Tech Support is standing by and ready to help. Contact us at cru-dataport.com/support. CRU also offers phone support at (800-260-9800).